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Doklady Vsesoyuznoy Ordena Lenina Akademii Sel'skokhozyaystvennykh
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UTILIZATION OF THE BLOOD OF FARM ANIMALS. COMMUNICATION 9*.
BLOOD SERUM OF ANOTHER SPECIES AS THE OPTIMAL MEDIUM FOR
THE PRESERVATION OF ERYTHROCYTES

Acad N. G. Belen'kiy
Submitted 25 March 1950

[A Digest.]

The blood serum of horned cattle is a medium which assures long preserva-
tion of erythrocytes of human blood without impairment of the latter's ability
to combine with oxygen. In that respect, nonspecific serum, with a minimum
preservation period of 30 days, surpasses both human blood plasma and artifi-
cial media which permit preservation of full viability of erythrocytes only up
to a period of 21 days. The unchanged gas composition of human erythrocytes
combined with nonspecific serum, as well as complete absence of hemolysis after
a month's storage, permits the conclusion that these erythrocytes are alive,
that the respiratory functions of the mixture have been preserved, and that con-
sequently the mixture has retained its full value as a transmitter of oxygen to
the tissues of an organism into which this mixture may be introduced. The pos-
sibility of prolonged storage and of transfusion of erythrocytes combined with
nonspecific serum opens up wide perspectives, as far as the utilization of these
erythrocytes and creation of reserves of unimpaired quality for introduction into
the organism whenever transfusion of whole human blood is required are concerned.

It has been shown in previous communications that nonspecific serum (VNS)
is capable of replacing the blood plasma of other animals, and also of humans,
in cases when there is no necessity of introducing erythrocytes into the blood.

*Communications 1-8 have been published in the following issues of the Re-
ports of the All-Union Order of Lenin Academy of Agricultural Sciences imeni
V. I. Lenin: No 11-12, 1945; No 6, 1948; No 2, 1949
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